

THESIS PROJECT ARCHIVE SYSTEM
(T-PAS)

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ABSTRACT

Thesis is the report should be made by final year students in the Faculty of Computer Systems & Software Engineering (FSKKP), Universiti Malaysia Pahang. There are two types of thesis report namely research and technical. Each thesis report must be bound kept in the thesis room. The thesis then will use as a general reference thesis for FSKKP's students. However, there are constraints in terms of the arrangement and search methods to find each thesis reports stored in the room. This will make it difficult for students to find topics that they wish to use a reference. There is also has time constraint problems faced by students and difficult for them to go into the room at every times. Safety of each thesis report also cannot be guaranteed because there is no method that can ensure the printed report or thesis project was included in the compact disc can hold out against damage or theft. Therefore, Thesis Project Archive System (T-PASS) was developed to help students more easily to find their desired report. Students can enter the system at every time. In addition, the safety report is also more secure as more systematic management methods in the T-PAS can create data integrity in it. To create a complete system, T-PAS will be developed using the Waterfall System Development Life Cycle (SDLC). PHP programming language and MySQL has been chosen as the need to develop this system. By using storage approach using database system, it will prove to be helpful to manage the report thesis in FSKKP for their students more effectively

ABSTRAK

Thesis adalah laporan yang perlu dibuat oleh pelajar tahun akhir di Fakulti Sistem Komputer & Kejuruteraan Perisian (FSKKP), Universiti Malaysia Pahang. Terdapat dua jenis thesis iaitu berbentuk teknikal dan penyelidikan. Setiap laporan thesis perlu dijilidkan dan terdapat laporan thesis perlu disimpan di dalam bilik thesis untuk dijadikan rujukan umum kepada pelajar FSKKP. Walaubagaimanapun, terdapat kekangan dari segi susunan dan kaedah carian untuk mencari setiap laporan thesis yang tersimpan di dalam bilik tersebut. Ini akan menyukarkan pelajar untuk mencari tajuk yang mereka kehendaki untuk dijadikan rujukan. Terdapat jugak masalah kekangan masa yang dihadapi oleh pelajar dan menyukarkan mereka untuk pergi ke bilik tersebut pada setiap masa. Keselamatan setiap laporan thesis juga tidak dapat dijamin kerana tiada kaedah yang dapat memastikan laporan thesis yang telah dicetak atau projek yang telah dimasukkan ke dalam cakera padat dapat bertahan daripada kerosakan atau kecurian. Oleh itu, sebagai langkah penyelesaian *Thesis Project Archive System(T-PAS)* telah dibangunkan untuk membantu pelajar lebih mudah untuk mencari laporan yang mereka kehendaki. Pelajar juga boleh memasuki sistem pada tiap-tiap masa. Selain itu, keselamatan laporan juga lebih terjamin kerana kaedah pengurusan yang lebih sistematik di dalam T-PAS dapat mewujudkan integriti data di dalamnya. Untuk mewujudkan sistem yang lengkap, T-PAS akan dibangunkan menggunakan kaedah *Waterfall System Development Life Cycle (SDLC)*. Bahasa pengaturcaraan PHP dan MySQL telah dipilih sebagai keperluan bagi membangunkan sistem ni. Dengan menggunakan pendekatan storan menggunakan sistem berpangkalan data, ianya akan terbukti dapat membantu FSKKP untuk menguruskan laporan thesis pelajar mereka dengan lebih efektif

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CHAPTER 1

INTRODUCTION

1.0 Overview

Thesis Project Archive System (T-PAS) is a system that store and manage final year student's thesis and projects in one system. Nowadays, the organization prefers to use manual record base to manage any student thesis and project without a proper arrangement. According to journal written by Bela Banathy, "A Taste of Systematics", she said human activity systems are our purposeful creation (Bela Banathy, 1997). Manual based system also one of the human activity system that are create for are specific purpose. But in the upcoming times, the way data and information is handle will be change based on the technology implement. The way of human thinking will create the new ideas to manage the information with the proper system. Then, there come with an idea to manage the information with the computerize system and arrange the data in one centralize database system.

T-PAS is develop to solve the problem occur in the manual based system on the organization. Each thesis, projects and research that have been done by final year students do not have a proper place to store it effectively. The thesis report is stored by using manual method such as rack book record and for the softcopy is burned on Compact Disk (CD). This method is not too effective to apply without the combination

with computerize database. Besides, T-PAS can be used to manage the information about students projects with more efficient. The method of implementation can solve the problem occurs on the organization. Each students or staffs need to take a long time to find the related thesis they wanted in the thesis room. Proper information about projects has been done by final year students it easier to find if there is more systematic system that can store all the projects in one system. According to O'Brien, J., and Marakas, G. on the book they write titled Management Information Systems, Computer Software (2008) (page185). They said operational database stores information about the activities of an organization” and this significantly was show the archive system like T-PAS can be used to stores all related project create by students in an organization.

In addition, T-PAS is developing using the well-known of PHP programming language that can easier to maintain and improve in future use. Firstly, the project or research must finish by students and was by graded evaluator, coordinator and supervisor. Then, T-PAS is used to store the projects information and make sure the projects will not lose their information. The useful of this system is could help junior students to find the past year student project or research and made as reference or new idea. But, they must get the permission with the supervisor whether the report can be downloading or not. In manual system, each student could hard to get information regarding the thesis they are wanted. With this system architecture, it can help the student get the information in a proper way.

1.1 Problem Statement

Nowadays, each human task needs information to make sure it can do in the proper ways. The technology rise was improved on how human get the accurate information. However, there some organization still implements manual arrangement system and it cause some problems in present and future use. The manual system makes the searching of documents became harder. It is hard to make decision whether the information gathering is achieved or not. If there errors occur or need to update on the

documents, it is often necessary to recreate the whole documents from beginning, rather than just update a current version with the related detail by using system.

At the organization, final year student project's thesis is stored in the specific thesis room. The thesis is arranged in the book rack without a proper arrangement of category, authors, course and title. The softcopy of thesis and project that burned into compact disk (CD) also stored at thesis room. The manual arrangement could lead junior students hard to find the thesis they are wanted. Human error also can cause the arrangement of thesis could change in wrong place. By the time, it hard to find the thesis because there are lacks of information put at the side cover of thesis and also to the CD.

The time constraint faced by students also lead the information about thesis their wanted is hard to get. Most student still assignation with their time goes to thesis room. Some of students still do not know where the thesis room is. After the lecturer session, most of student will prefer to take a rest with their time. In addition, if they are wanted to find the information at the day-night, it can cause a lot of problem because the room already closed. The distance of the thesis room with their hostel also is one of the causes that lead students lack arrive to the room. In conclusion, students do not have much time to go to thesis room continuously.

Move to the safety of the thesis and projects, the safety of the whole thesis is not guaranty at all. Firstly, the thesis arranged at the room can still damage or loss that cause by human error. It is hard to retrieve back the thesis like an original one. Furthermore, the damage of thesis can lead misunderstanding about what the information should be delivered to readers. All the thesis with their projects also have another copy in Compact Disk (CD), but it also not have a safety guaranty to make sure the integrity of the data inside. The CD can also damage or stolen by unscrupulous people. It is important to have awareness about the integrity of thesis to make sure it can useable as a reference for future students.

1.2 Objective

In generally, the objective of this project is to develop an archive system that can solve any related problem occur. The objectives of the project are described as below:

- i. To identify the requirements which are useful to develop an archive system that can help faculty to store the student's thesis and project in one system and make sure it easy to keep track.
- ii. To design a system that can solve the most of student's time constraint and distance by help them to find references using online method.
- iii. To develop a system that can maintain the safety of the thesis and avoid any physical damage.

1.3 Scope

The scope of this project is to store the thesis and project information that has been done by final year student of diploma and degree from Faculty of Computer System and Software Engineering (FSKKP). The system if focuses on how the thesis information should be manage by an administrator and supervisor.

The administrator can be coordinator of program or selected staff in the faculty. The supervisor will be able to manage any uploaded thesis and the project into the system. Supervisor must approve the uploaded thesis or any related files that has meet a requirement with student and supervisor information. After that, the thesis and any related file can be view online by others students.

Supervisor of the students can make sure the uploaded thesis is correct with their real title. The information of their students thesis and project must be assign with the officially information such as author, project type and thesis category.

Only final year students of diploma program and undergraduate program from FSKKP can upload file onto the system. They have abilities to upload the thesis, projects or research and any related documents that have done. In addition, if there have any changes need to be made regarding on what their uploaded, they can update it but must have an approval by their supervisor before the thesis can be published. Only the document with permission will be publish and view by other users.

The other scope of this project also important to make sure the flow of the system will run smoothly. It can be describe as following:

- i. The system only focuses for FSKKP's students and staff but must meets the type of user and will have different way to use.
- ii. System can only be managed on platform that has operating system installed with the web server that provides *Hypertext Preprocessor (PHP)* services and MySQL database architecture.
- iii. System can be view by any web browser that have connection with internet

1.5 Thesis Organization

This report consists of six chapters at all. The first chapter will discuss on introduction and identification of the system to be develop. This chapter will separate to five small topics such as an introduction about the system; problem occurs on the current situation, objective to develop this system, scope of project overall and thesis organization to briefing what flow on this report.

The second chapter will be describes about literature review with related on selected system. Two sub researches are needed to provide the others system information is currently used in the market. The second sub research is developer must write about technique and method implement to the system, equipment needed to achieve the usability and technology is going to use.

While in third chapter, there will be describe about an overall of methodology will be implement to developing the system. This project will develop by using

waterfall SDLC. This methodology has phase that developer should follow such as planning on what should be done on this project, then analysis the related information of the system, making the suitable design that meet requirement, developers must also do testing of the system functional, making maintenance if there are error occurs in the future and lastly developer need to making documentation about the system facility in future time.

The next chapter is chapter fourth. This chapter will focus on analysis and design of the project based on the requirement. Overall system has to be described by the developer and the content of this chapter is related by the analysis and design to form a project. The design must have relation between the database and information collected. The developer should show the flow on how to make sure the system is develop.

For the fifth chapter, system will be tested by developer to evaluate the functionality and effectiveness of the system. Testing phase is done in this chapter after system already developed. This phase will perform testing on each module and carried the result and data analysis. Is it important to make sure the testing phase meet the entire project objective and it can provide the output as require.

Finally, on the last chapter, it will contain overall conclusion about this project. The summary will conclude the advantages and suitability about the system. In addition, the future upgrade for this system will depend on the effective and efficient use by consumer.

CHAPTER 2

LITERATURE REVIEW

On this chapter, the project will focus on literature reviews based on the architecture of the project to be developed later. According to Dena Taylor, Director of Health Science Writing Center from University of Toronto (2007); *“In writing the literature review, your purpose is to convey to your reader what knowledge and ideas have been established on a topic, and what their strengths and weaknesses are.”* From this statement, the literature review is like way to gain the ideas on how the developed system is going to be.

The discussion on this chapter consist three sections: The first section is describes the current system using in market and organization nowadays. From the information gather by the existing systems, find the constraint that occurs from the system. The second section will explain about the comparison between the systems. There will three parts to be discussed such as thesis access, user availability and level of thesis.

The last section will briefly explain about development tools using while developing this system. The T-PAS needed the proper development tools that cover on software use to design the interface. Secondly, programming language that can be used to build on how the system should be works. Thirdly cover on database management system (DBMS) that can store any related data. Lastly, the web server that can help the system will make sure the system and database can working properly and communicate with users.

2.0 Overview of Thesis Project Archive System (T-PAS)

The study of current system was conducted at Faculty of Computer System and Software Engineering (FSKKP), Universiti Malaysia Pahang. By default, the current system implement in the FSKKP only use the record base system. In fact, the information related on the thesis that stored in the faculty is not relevant in the future. Faculty needs the new system that can store the thesis in more systematics.

There is benefit on computerize system that in current time and for the future. The system can help thesis information stored in the database and users can interact with the system to get the information about the thesis their want. Each thesis done by FSKKP's students will have their level and also grade. In current situation, the theses only arrange in thesis library room and do not have the proper information to help student find their wanted thesis. With a system, student can find the thesis in an easy way and safe time.

2.1 Existing System Review

There are three existing system that currently used in the market and was evaluate. The systems examined on type of users, offered function and documents permission. The three systems related to the Thesis Project Archive System (T-PAS) are described below.

2.1.1 Malaysian Thesis Online (MyTO)

Malaysian Thesis Online (MyTO) is a thesis system used by University Putra Malaysia (UPM). The system offered to all users from inside and outside university to search thesis their wanted. Only admin can logon to the system, the other user only has abilities to search thesis. The additional function offered from this system is allowed user the search thesis from other university. This function only gives a link to other

university and not officially include from MyTO database. For the thesis document, it only limit for abstract view only, not all section of the thesis has a permission to view it.

2.1.1.1 Screenshot of MyTO

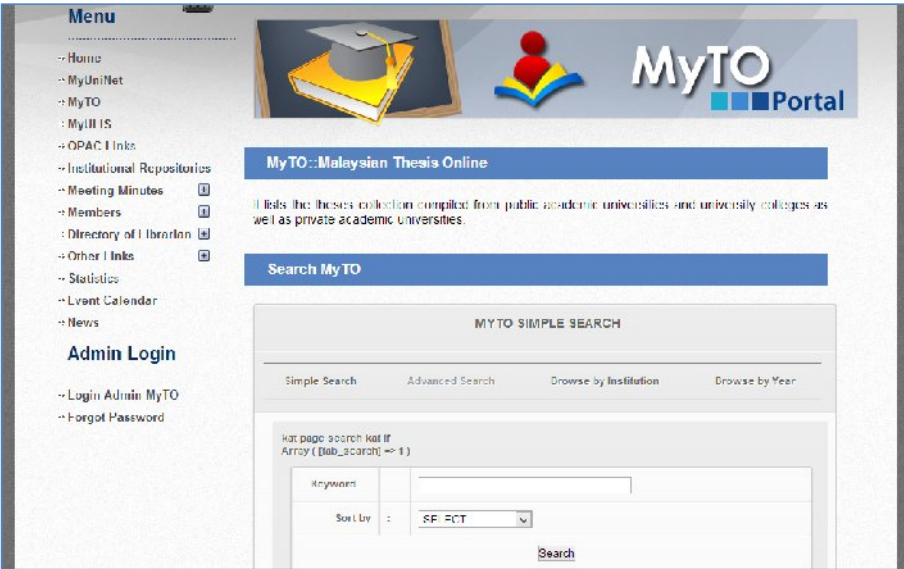


Figure 2.1: Main page of MyTO

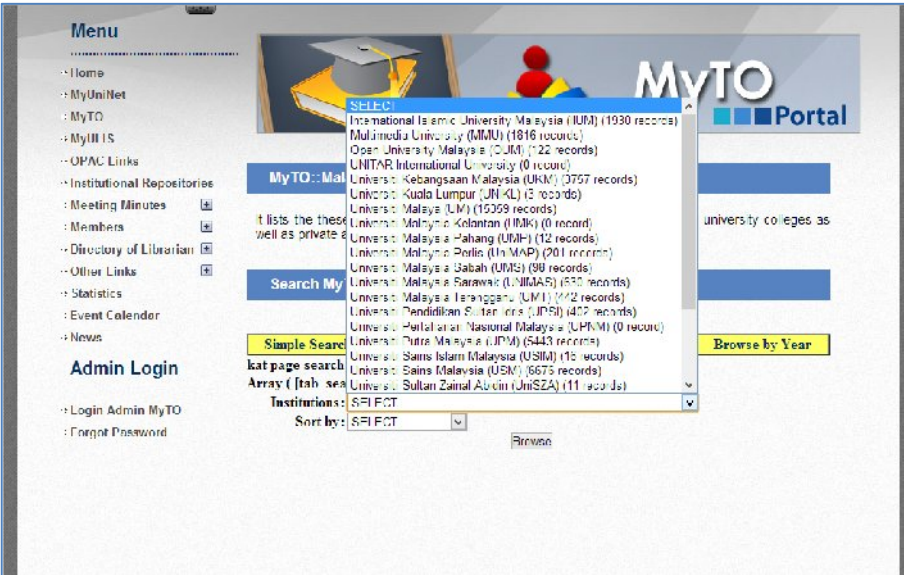


Figure 2.2: List of thesis provided by public and private academic institution

2.1.1.2 Constraint of MyTO

Based on the research and gathered information give some useful solutions to the system to be develop. There are some constraint occurs that is not suitable to be implement for FSKKP. Firstly, only admin can logon to the system, the other user only has abilities to search thesis. The user only can view the thesis in selected section and not for the whole document. Even user was downloaded the files, it also remain the same. User only can view the selected area on the thesis.

Secondly, MyTO lack of rules of design. For example, Golden Rule of design firstly gives priority on 'Place Users in Control'. The main page of MyTO was gives an appropriate instruction, but after user was successful search their needed thesis, users cannot back the main page because there is no "back" or "previous" provided. In fact, users cannot control to where they want to going.

Furthermore, the search method is totally not working. When users want to sort the thesis based on related category, the list of thesis is not properly sorted. It remains with the same result even though user has change the sorted method. This situation causes user hard to find the thesis that their want.

2.1.2 Universiti Utara Malaysia eThesis

eThesis is the system that store student thesis from Universiti Utara Malaysia (UUM). eThesis is manage by Perpustakaan Sultanah Bahiyah of UUM. The system only can be access by staff and higher degree students from UUM itself. UUM eThesis only provide abstract and publications' details for the user. However, for the full report of publication can be accessed at Special Collection Division of Perpustakaan Sultanah Bahiyah.

Thesis that uploaded into this system has benefit about the copyright of the thesis. Firstly it can give better visibility and knowledge of user's publication. Users

not worried to finding their thesis in the system because the document is arranged with the efficient manner. Lastly, user will have higher citation records and it will give them with the higher capacity thesis records.

2.1.2.1 Screenshot of UUM eThesis



Figure 2.3: Main page of UUM eThesis



Figure 2.4: Search thesis by available faculty



Figure 2.5: List of thesis from the related search

2.1.2.2 Constraint of UUM eThesis

From the research on UUM eThesis, there are some weakness that not suitable to implement on the system to be develop for FSKKP. Firstly, the scope of the system is cover on the whole university, which means it needed a lot of storage to store thesis data on database.

Secondly, the database of thesis is not updated with the new thesis. From the observation on UUM eThesis, the last updated thesis is on 2009. In FSKKP, the student's project on Information Technology area always improves ever year and likewise their quantity of thesis also improves. In addition, new students will need updated information for new technology increase every year. Therefore, the system needs to be updated with the more theses each year.

Lastly, the thesis only can be uploaded by higher degree students. Means that, others level of students such as diploma and lower degree cannot upload their reports or thesis. It is hard for students to get references and build an idea if they want to do their

final project. In FSKKP, there are many type of student qualification that needed a system to store their thesis in a proper manner.

2.1.3 International Islamic University Malaysia (IIUM) Thesis

International Islamic University Malaysia (IIUM) Thesis or called IIUM Thesis is the sub module system that combines with the IIUM Library System. This system can be used by all user either inside or outside IIUM. User only has capabilities to search thesis and not all information of thesis can be viewed. IIUM Thesis is thesis archive that store student's thesis from different faculty and level of study from IIUM.

Their two methods to find related thesis that user wanted. The system gives users an option for users to finding thesis by using 'Basic Search' and Advance Search'. In the 'Basic Search' method the result will come with the input that related from users key-in. The search method is no specific to what type of thesis or level their wanted. If users need to find the specific thesis, they can use the 'Advanced Method' to find it.

2.1.3.1 Screenshot of IIUM Thesis

The screenshot displays the IIUM Thesis Library Research Gateway interface. At the top, the IIUM logo and name are visible in both Arabic and English, accompanied by the tagline 'Garden of Knowledge and Virtue'. Below this is a navigation menu with links to HOME, PROGRAMMES & COURSES, ADMISSIONS & APPLICATIONS, BROWSE IIUM, LIFE IN IIUM, PEOPLE & STAFF, NEWS & UPDATES, and ABOUT IIUM. The main content area is titled 'Library Research Gateway' and features a search bar with a dropdown menu for 'TEMPLATE' (set to 'IUM Thesis'), a text input field for 'ANY SEARCH', and a 'Show me 25 results per page' option. There are 'SEARCH' and 'RESET' buttons. A sidebar on the left contains links for 'Search Documents' and 'Search Video'. The footer contains a grid of links for various university services and resources.

Figure 2.6: Main Page of IIUM Thesis

International Islamic University Malaysia Library Research Gateway

Search Documents
Search Video

Search Documents
Basic Search | Advanced Search

TEMPLATE : IUM Thesis

ANY SEARCH

Full Text Search

Contents containing

Identifier

Title

Translated Title

Year of Publication

Publisher

Programme

Level of Study

Abstract

Object

Call No

Language

Any of these fields All these fields

Show me 25 results per page

Sort by Relevance (default) | Ascending | Descending

SEARCH RESET

Figure 2.7: Advance search to find related thesis

International Islamic University Malaysia

Garden of Knowledge and Virtue

Research | Library | MyIUM | E-learning | MS Exchange CMA | Webmail | Self Service

HOME PROGRAMMES & COURSES ADMISSIONS & APPLICATIONS BROWSE IUM LIFE IN IUM PEOPLE & STAFF NEWS & UPDATES ABOUT IUM

Library Research Gateway

IUM Library > Research Gateway

Search Documents
Search Video

Results

Showing 1 - 8 of 8 documents found.

- Thesis : Student achievement database system (Achiever) / Nurul Akmar Osman
- Thesis : Knowledge representation using Voronoi Diagram / Mariam Majeed Mustafa
- Thesis : Report of disciplinary cases system / Salha binti Abd Rahim
- Thesis : MEDICASE system (Medical Clinic Database System) / Muhammad Sahawi Al-Jalil
- Thesis : Usrah database system / Habiba Abdul Kadir
- Thesis : Digital signature for hadith / Khalid Mohamedbrian Ali
- Thesis : Islamic quiz learning program (IQZ program) / Amella Rithahani Ismail
- Thesis : Computerizing the English Placement Test (CEPT) / Mariam Kosa

PERSPECTIVE CURRENT PARENTS RESEARCHERS ALUMNI BUSINESS & GOVERNMENT

Figure 2.8: Example of search result in the IUM Thesis

2.1.3.2 Constraint of IIUM Thesis

After some research to the IIUM Thesis, there is some weakness that not suitable to implement in FSKKP. In the ‘Advanced Search’ section, the design is too complicated to understand by user. Some of users need an info regarding on how the system will works. Each row’s form on the ‘Advanced Search’ provide with too complicated textbox that can cause loss focus on what their want to find.

Next, when the system was success to release result of thesis list. The listed list cannot be sorted with the proper arrangement. The list of thesis shown in random list and users need to find the thesis on by one. In fact, the unordered cause users lost too much time to find their needed thesis as references.

Finally, IIUM Thesis also not help user regarding important information about their searching. For example, when user was search the thesis about “Windows 7”. After the result was show, the key of searching is not provided in the result page. Only list of related thesis are listed on the list. User can have some interferences on what their want finding. In addition, the ‘back’ button is not provided and can cause user hard to back to previous if their want to make any changes about their finding.

2.2 Comparison the Existing Systems

	MyTO	UUM eThesis	UUIM Thesis
System Access	Users can access the thesis from all academic university in Malaysia	Only users from UUM can access the thesis system	Only thesis from UUIM can be accesses by all type of users
Level of Thesis	All level of thesis can be accesses	Only postgraduate and PhD level thesis can be accesses	All type of thesis level from UUIM available to access by users
Scalability	Can be access with	The access can be	Hard to access if

	any condition of internet speed or quantity of users.	control and no problem with the quantity of the users.	too many users access in the same time
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Table 2.1 Comparison between existing systems

2.3 Development Tools

This system will be developing using selected tools to support the development of the system. Above table is the description of the tools:

Software	Adobe Dreamweaver CS5, Adobe Photoshop CS5
Programming Language	PHP 5.0
Database Management System (DBMS)	MySQL
Web Server	XAMPP (Apache HTTP Server)

Table 2.2: Development Tools

2.3.1 Software Tools

This section will discuss about tools that will be used on develop the proposed system. There are the software tools that will be used to develop the system.

2.3.1.1 Adobe Dreamweaver CS5

Adobe Dreamweaver CS5 is an application that can create interface with just drag and drop and less coding. It is a web design software that provides and intuitive visual interface for making and editing HTML interface and PHP architecture. It is also the

industry leading web authoring and editing software that provides both visual and code-level capabilities for creating standards based websites and design for the desktop, smartphones, tablets and other devices.

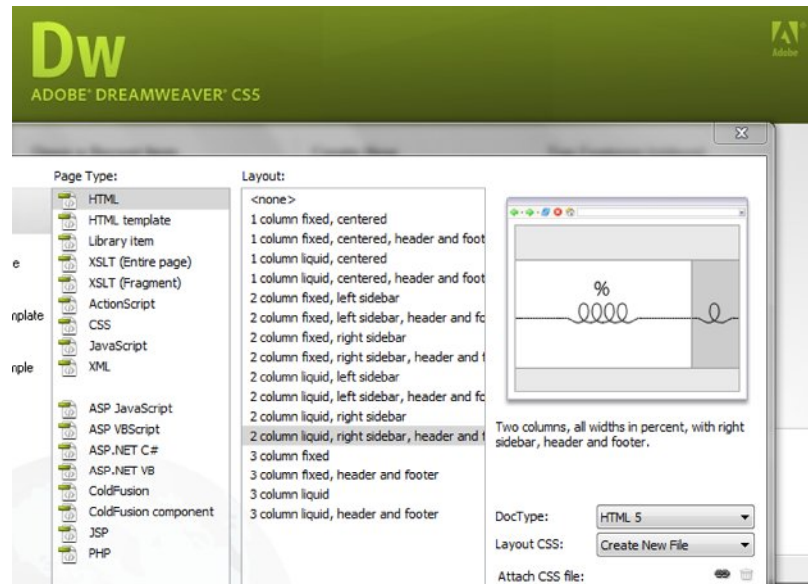


Figure 2.9 Adobe Dreamweaver CS5

2.3.1.2 Adobe Photoshop CS5

Adobe Photoshop CS5 is a graphics editing program developed and published by Adobe Systems. It was launched on 12 April 2010. This application will be used to create system banners and images needed for the portal. It also contains many techniques for editing images and all the techniques are user-friendly and easy to use.

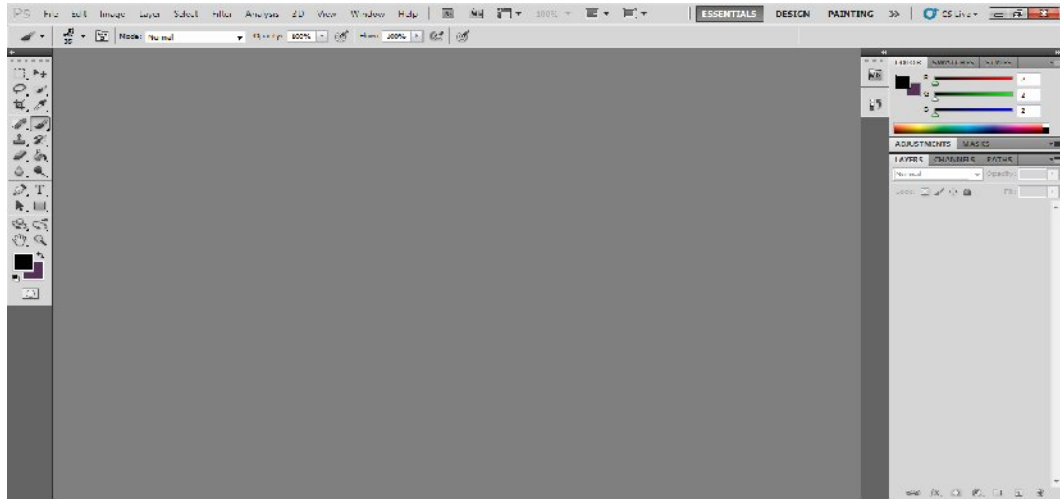


Figure 2.10 Adobe Photoshop CS5

2.3.2 Programming Language

Programming language is series of instruction to communicate with computer. It is used in software development to create programs or application that serves end user. For this system, it will developed using PHP 4

2.3.2.1 PHP 4

PHP is one of the most popular server side scripting languages running today. It is used for creating dynamic webpages that interact with the user offering customized information. PHP offers many advantages; it is fast, stable, secure, easy to use and open source (free). PHP code is inserted directly into the HTML that makes up a system interface. When a visitor comes to the website, the code is executed. Because PHP is a server side technology, the user does not need any special browser or plug-ins to see the PHP in action. PHP doesn't use a lot of the system's resources so it runs fast and doesn't tend to slow other processes down. It is typically used as an Apache module, written in C, so it loads and executes quickly. It works well with other software and can be quite fast. PHP is also fairly stable and since it is open source, the PHP community works together to fix any bugs.

Advantages of PHP

- Fast, Stable, Secure, Easy to use and Open Source (Free)
- Simplicity. Easy for beginner to understand and learn
- Does not require a lot of system's resources

Offer many levels of security to prevent malicious attacks.

2.3.3 Database Management System

Database management system (DBMS) is a software package with computer programs that controls the creation, maintenance, and use of a database. It allows organizations to conveniently develop database for various applications. A database is an integrated collection of data records, files, and other objects. A DBMS allows different user application program to concurrently access the same database.

2.3.3.1 MySQL

MySQL is the world's most used open source as a server providing multi-user access to a number of database. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation.

MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python." Free-software-open source projects that require a full-featured database management system often use MySQL.